

Third West Weekly Report Shepherd, Michael

124 1228 - R8 SDMS

to:

Joyce Ackerman, 'Craig Barnitz (cbarnitz@utah.gov)'

05/25/2012 10:17 AM

**Hide Details** 

From: "Shepherd, Michael" < Michael. Shepherd@rockymountainpower.net>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)'" <cbarnitz@utah.gov>

7 Attachments











Weekly Report 05-14 to 05-18-12.pdf Third West Weekly Log 2012-20.pdf 235771-1.pdf 235868-1.pdf 235966-1.pdf





236132-1.pdf 236169-1.pdf

Joyce & Craig,

Attached are the reports for the week of May 14, 2012.

All air monitoring results came back negative, except for two chrysotile hits, one on Tuesday, the other on Thursday.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
801.631.1310 Cell
801.220.2797 Fax
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NA

determined necessary



# 3<sup>RD</sup> WEST SUBSTATION REMEDIATION PROJECT HEALTH SAFETY MANAGER (HSM)

#### DAILY CHECKLIST

D		DAIL I CHECKLIS!
DATE:		05/14/11
<u>Gen</u>	eral	
		rea Health and Safety Inspection
NA		Review and innecessary update Activity Hazard Analyses (AHA) based on planned site
		activities for the day
NA		Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA		Site hazard and safety instruction for all first time employees, contractors or visitors
NA		Complete Employee Meeting Record Form B (where applicable)
NA		Document required Respirator Training completion with Form H
NA ·		Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA		Confirm return of waste material manifest documents for each load with site
		manager.
	-	ete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA.	Combined Space Entry Permit From F
[	<b></b> ✓	Exclusion zone operations are practiced as instructed.
		☐ Decontamination unit is working properly.
		☑ Workers are using decontamination unit as instructed.
		☑ Workers use personal protective equipment properly.
$\square$		Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation sites and track out prevention.
$\overline{\checkmark}$		Review sign-in/sign-out log throughout and at the end of the workday.
☑		Secure the site at the end of the workday
Sam	pling	
NA :	Soil Co	onfirmation sampling for any newly excavated areas
		Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA		Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal

Digitally photograph each sample location and at any place field sampling personnel





⊻		Electronically file photo files into the on-site database
Ø		Complete Field Documentation
	$\overline{\mathbf{V}}$	Field Sample Data Sheets (FSDS)
	$\overline{\mathbf{V}}$	Logbook
	$\overline{\mathbf{Q}}$	On-site computer database
$\overline{\mathbf{A}}$		Label each sample media with a unique number
$\overline{\mathbf{A}}$		Seal sample(s) in zip lock plastic bags
		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
☑		Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
<b>7</b>		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 05/14/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: _Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.		A (A)	х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	,
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.	1251		х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	In Compliance	Out of Compliance	□ N/A	Corrective Action Taken and Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	9
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			х	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	,
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			2
1926.150 (c)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

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		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x	5		
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	х			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	x			

,

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Exclusion zone inactive today.

Newman did some excavation with clean material in the EZ for a short time. They watered the stockpile of native material in the morning and throughout the yard later in the day. They covered the ground grid trenches in the north arm. This activity included moving small amounts of native material that were then covered with clean fill. They were encouraged by R&R to continue soaking areas of exposed native material throughout the yard with dry and windy conditions prevailing. R&R discussed this with CVE project manager as well.

CVE line crew continued assembling ground grid and mats. They did some excavations on the south and central areas of the yard.

CVE electricians continued control cable connections and equipment testing.

South wire/Wasatch electric continued working on transmission cable terminations on Gadsby line. Weather was warm, dry and sunny with moderated afternoon winds and temperatures in the mid 80's.



determined necessary



### 3<sup>RD</sup> WEST SUBSTATION REMEDIATION PROJECT

## **HEALTH SAFETY MANAGER (HSM)**

#### DAILY CHECKLIST

	DAILT CHECKLIST
DATE:_	05/15/11
Gene	ral
	Vork area Health and Safety Inspection
NA	Review and ifinecessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues
NT A	and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA.	Complete Employee Meeting Record Form B (where applicable)
NA NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
	manager.
NA C	omplete all CSHASP Forms (for applicable activities planned for that day)
	A Illness/Injury Report Form A
	A Site-Specific Training Record Form C
	A Hot Work Permit Form D
N	A Trench/Evacuation Permit Form E
N	A Combined Space Entry Permit From F
<b>▽</b>	
	☐ Decontamination unit is working properly.
•	☑ Workers are using decontamination unit as instructed.
	☑ Workers use personal protective equipment properly.
☑	Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
$\square$	Review sign-in/sign-out log throughout and at the end of the workday.
	Secure the site at the end of the workday
<u>Sam</u>	oling ·
NA S ☑	oil Confirmation sampling for any newly excavated areas  Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel





M		Electronically file photo files into the on-site database
Ø		Complete Field Documentation
		Field Sample Data Sheets (FSDS)
	$\overline{\Delta}$	Logbook
		On-site computer database
V		Label each sample media with a unique number
abla		Seal sample(s) in zip lock plastic bags
Ø		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Ø		Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
V		Review and disseminate sample results as received from the laboratories to Project
		Manager and other appropriate managers and employees
Ø		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 05/15/12	
Location: 3rd West, 1st South, SLC	Job Number:	
Survey Conducted By: <u>Justin Kargis</u>	Title:	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	8
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

Standard	Title	[] In Compliance	Out of Compliance	O N/A	Corrective Action Taken and Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	-
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х	20		
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	*
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			X	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х	3		
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.	5.		х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			,
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x	No.		
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.		v.	x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.	2		х	

Exclusion zone inactive today.

Newman watered the stockpile of native material in the morning and afternoon. They also watered other areas of exposed native soil throughout the yard.

RMP,CVE, Kenny conducted walk through inspection of station equipment and connections to determine readiness for energizing.

CVE line crew continued with ground grid trenching and assembly.

CVE electricians worked on control cable connections.

CVE fabricators came late in the day and worked on removing forms from piers between switch gear and transformer 2.

South wire/Wasatch electric pulled cable from Jordan sub to jumpers in the yard.

Weather was hot, dry, and sunny with moderate winds and temperatures in the high 80's.





### 3<sup>RD</sup> WEST SUBSTATION REMEDIATION PROJECT

## **HEALTH SAFETY MANAGER (HSM)**

#### DAILY CHECKLIST

		DAIL! CHECKLIS!
DA	TE:	05/16/11
	General	
		area Health and Safety Inspection
	NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	<b>B</b> T 4	activities for the day
	NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues
	TAT A	and any modifications to the CSHASP
	NA	Site hazard and safety instruction for all first time employees, contractors or visitors
	NA	Complete Employee Meeting Record Form B (where applicable)
	NA	Document required Respirator Training completion with Form H
NA	L	Record times and numbers of dump trucks and trailers as they leave the site with
<b>.</b> T .		contaminated material.
NA	Ŀ	Confirm return of waste material manifest documents for each load with site
. T .	<b>a</b> 1	manager.
NA		ete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA .	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
		Exclusion zone operations are practiced as instructed.
		Decontamination unit is working properly.
		✓ Workers are using decontamination unit as instructed.
		✓ Workers use personal protective equipment properly.
	$\overline{\mathbf{Q}}$	Set air samples at cardinal compass points around exclusion zone. Check
		throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation
		sites and track out prevention.
	☑	Review sign-in/sign-out log throughout and at the end of the workday.
		Secure the site at the end of the workday
	<u>Sampling</u>	
NA	Soil C	onfirmation sampling for any newly excavated areas
Ø		Stationary Air Monitoring during contaminated soil removal around the perimeter of the
_		exclusion zone
	NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
		removal
	NA	Digitally photograph each sample location and at any place field sampling personnel.
	- 14 B	determined necessary





	Electronically file photo files into the on-site database
	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
,	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
	Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: <u>05/16/12</u>				
Location: 3rd West, 1st South, SLC	Job Number:				
Survey Conducted By: _Justin Kargis	Title:				

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
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1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
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1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
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1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926,1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.	2		х	
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1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
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1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x		-	
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1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

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Standard	Title				Date
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1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Exclusion zone inactive today.

Newman watered the stock pile and other areas of the yard before leaving for the day around 10 am.

CVE line crew continued with ground grid trenching and assembly and worked on items from the inspection walk from 5/15.

CVE electricians worked on control cable connections from control building, switch gear and equipment in the yard.

RMP relay tech personnel have been working in the switch gear building for the last few weeks.

CVE fabricators were on site for about an hour in the afternoon,

South wire/Wasatch electric pulled cable from Jordan sub to jumpers in the yard.

Weather was warm, dry, and overcast with gusty winds and temperatures in the mid 80's.



determined necessary



### 3<sup>RD</sup> WEST SUBSTATION REMEDIATION PROJECT

### **HEALTH SAFETY MANAGER (HSM)**

		DAILY CHECKLIST
DATE	E:	05/17/11
C	eneral	
		area Health and Safety Inspection
NA NA		Review and innecessary update Activity Hazard Analyses (AHA) based on planned site
1 17	1	activities for the day
N/	4	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA.	4	Site hazard and safety instruction for all first time employees, contractors or visitors
N.	4	Complete Employee Meeting Record Form B (where applicable)
N.	4	Document required Respirator Training completion with Form H
NA ·		Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA		Confirm return of waste material manifest documents for each load with site
		manager.
NA	Comp	lete all CSHASP Forms (for applicable activities planned for that day)
	NA	Illness/Injury Report Form A
	NA	Site-Specific Training Record Form C
	NA	Hot Work Permit Form D
	NA	Trench/Evacuation Permit Form E
	NA	Combined Space Entry Permit From F
		Exclusion zone operations are practiced as instructed.
	_	☐ Decontamination unit is working properly.
		✓ Workers are using decontamination unit as instructed.
		✓ Workers use personal protective equipment properly.
		workers use personal protective equipment property.
☑		Set air samples at cardinal compass points around exclusion zone. Check throughout the day to ensure proper operation.
		Observe control measures for dust and fugitive materials i.e. watering excavation
•		sites and track out prevention.
		Review sign-in/sign-out log throughout and at the end of the workday.
☑		Secure the site at the end of the workday
<u>Sa</u>	mpling	
NT A	Sall C	onfirmation compling for any navyly avapuated areas
NA ☑	Suil C	onfirmation sampling for any newly excavated areas  Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
N.	A	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
N.	A	Digitally photograph each sample location and at any place field sampling personnel





		Electronically file photo files into the on-site database
☑		Complete Field Documentation
		Field Sample Data Sheets (FSDS)
		Logbook
		On-site computer database
$\checkmark$		Label each sample media with a unique number
		Seal sample(s) in zip lock plastic bags
☑		Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
$\checkmark$	•	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental
		Samples
$\square$		Review and disseminate sample results as received from the laboratories to Project
	-	Manager and other appropriate managers and employees
$\square$		Electronically file sample reports into on-site database



Project: 3rd West Sub Station	Date: 05/17/12	
Location: 3rd West, 1st South, SLC	Job Number:	
Survey Conducted By: _Justin Kargis	Title:	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.		,	х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.	1		x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			х	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х		-	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	X			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			e
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	,
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

	In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Title				Date
Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.		-	х	
Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new			x	
	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.  Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.  Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.  Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.  Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new

Exclusion zone inactive today.

Newman wetted the stockpile in the afternoon. They backfilled and compacted around the structure piers between switch gear and bay 2 transformer. They also backfilled for the capacitor bank sites as well. CVE line crews continued trenching for and installing ground grid in the north arm and east of the switchgear. This temporarily exposed some native material. Newman had soaked the areas where trenching took place to control dust emission from digging activities. This was discussed and decided as the best solution based on time constraints by RMP and R&R on 5/16.

CVE electricians continued working on control connections.

South wire/Wasatch electric continued pulling and terminating transmission lined from Jordan sub. RMP relay technicians continued working in the switchgear.

Weather was warm, dry, and sunny with moderate winds and highs in around 80.





# 3<sup>RR</sup> WEST SUBSTATION REMEDIATION PROJECT **HEALTH SAFETY MANAGER (HSM)**

	<u>DAILY CHECKLIST</u>
DATE:	05/18/11
<u>Genera</u>	
	ork area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
<b>N</b> T 4	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site
NA Coi	manager.  mplete all CSHASP Forms (for applicable activities planned for that day)
NA Col	
NA NA	
NA NA	
NA NA	
NA NA	·
	Exclusion zone operations are practiced as instructed.
v	✓ Decontamination unit is working properly.
	✓ Workers are using decontamination unit as instructed.
	✓ Workers are using decontamination unit as instructed. ✓ Workers use personal protective equipment properly.
	workers use personal protective equipment property.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
•	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
	Review sign-in/sign-out log throughout and at the end of the workday.
$\overline{\checkmark}$	Secure the site at the end of the workday
<u>Sampl</u>	ing
<u>= 411191</u>	terresidades de la companya de la c
NA Soi	il Confirmation sampling for any newly excavated areas
☑	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary





Electronically file photo files into the on-site database
Complete Field Documentation
Field Sample Data Sheets (FSDS)
Logbook
On-site computer database
Label each sample media with a unique number
Seal sample(s) in zip lock plastic bags
Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
Electronically file sample reports into on-site database



Project: 3rd West Sub Station	<b>Date:</b> 05/18/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (Ь)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.		. 9	x	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.		2	x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.		Я	x	4
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.		2	x	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	2
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.		н	x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	x			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

Standard	Title	In Compliance	Out of Compliance	D N/A	Corrective Action Taken and Date
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (Ь)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	,
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x			Y
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	x			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

Standard	Title	In Compliance	Out of Compliance	U/A	Corrective Action Taken and Date
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	х		4	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.		¥	x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	х			,

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.	a:	·	х	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

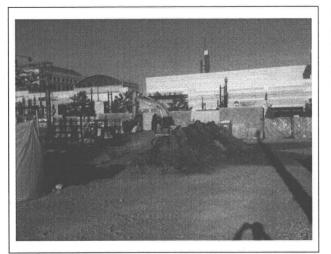
Exclusion zone inactive today.

Newman wetted the stockpile in the morning before rain began around 8:30. They backfilled around structure piers and capacitor bank sites before leaving for the day at 12 noon.

Compaction tested and passed by Wilding Engineering.

No other crews on site today.

Early winds preceded moderate to heavy rainfall between 8:30-11:30. Temperatures were in the low 60's.



РНОТО 1



РНОТО 2



РНОТО 3



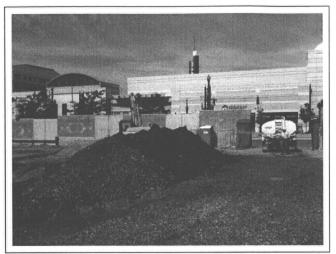
РНОТО 4

PROJECT NO:

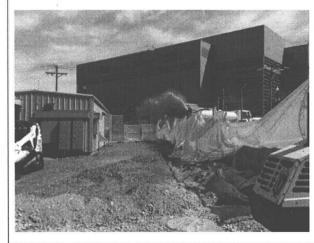
DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/12/12	FILE:	

SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/15/12	FILE:	

**SITE PHOTOGRAPHS** 

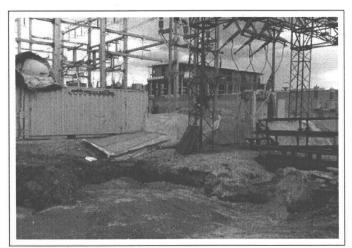




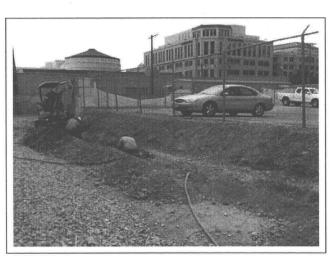
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

PROJECT NO:

REVIEWED BY: DESIGNED BY: SCALE: DCR DRAWN BY: DATE FILE: **JMK** 05/1612

**SITE PHOTOGRAPHS** 





РНОТО 1



РНОТО 2



РНОТО 3



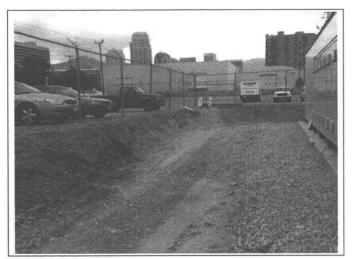
РНОТО 4

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 05/17/12	FILE:	

### SITE PHOTOGRAPHS





РНОТО 1



РНОТО 2



РНОТО 3

PROJECT NO:

REVIEWED BY: DESIGNED BY: SCALE: **DCR** DRAWN BY: DATE FILE: **JMK** 05/18/12

SITE PHOTOGRAPHS



## PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild DATE: Monday, May 14, 2011 PROJECT NAME: MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: 3000078050 / 10035803 Crew Start Time: 6:50 Crew Stop Time: Tot Hrs mns: 10:25 FCR Start Time: FCR Stop Time: Tot Hrs mns: 10:46 Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 50 degrees In AM, 80 degrees In PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE Fab Crew did not work on-site today. CVE Electrical Crew (1 man) worked on wiring up Xfmr #2. CVE Line Crew installed grounding and ground mats. Newman prepped subgrade for the road on the north side of the switchgear. Emerson tested grounding. Southwire/Wasatch is working at both the substation and the Gadsby terminal pole. They set the potheads and filled them with dielectric oil. CVE Line Crew = 5. CVE Fab Crew = 0, CVE Electrical Crew = 1, Newman = 4, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Jeremy Gentry 0644 Dispatcher logout, name and time: Kim Batt 1732 **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: 5/10 - Insufficient FTB coverage over the 138 KV duct bank 5/14 - Prakash indicates that the current conditions are acceptable. No need to install additional FTB **DELAYS OR LOST TIME ENCOUNTERED:** EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

**Rocky Mountain Power** 

Field Construction Representative

## PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub - Rebuild		DATE : Tue	2012	
PO & Work Order NO. :	30000780	50 / 10035803	MAIN CONTRACTOR	: Cache Valle	y Electric
Crew Start Time:	6:50	Crew Stop Time:	17:20	Tot Hrs mns:	10:30
FCR Start Time:	6:42	FCR Stop Time:	17:40	Tot Hrs mns:	10:58
Use military time format 00:00		, 51, 5, 6, 7, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	17.40		10.00
WEATHER CONDITIONS:		Sunny - 55 degre	ees in AM, 90 degrees in	РМ	
DESCRIPTION: (work perf	ormed. general co	omments, instructions to	contractor. # of crew m	embers onsite.	)
R&R set up four monitors. Wall Owen Wahlstrom, Luke Hoffma 3:30 and started stripping the N trench, installed bell ends, and a on the north side of the switchg ground grid and proved it all the pole. They are completing the a terminal pole, for the Gadsby line.	in, Ron Jensen, Roge I foundations. CVE E pulled strings in circu ear and graded the ro way to the switchge potheads, setting the	er Fuerst, Scott Collard, John Melectrical Crew not on-site toda its where string had not alread badway area from the control bar. Southwire/Wasatch is wor arrestors and perfonning jack	Mancini, and myself CVE I y. CVE Line Crew installed ly been pulled. Newman pro- puilding down to the 12 kV v rking at both the substation et tests from the vault to bot	Fab Crew showed grounding in the epped subgrade for aults 4/5. Emers and the Gadsby to the substation a	up about cable or the road on tested erminal and the
I If working in energize	D SUBSTATION:			-	
Dispatcher login, name and time		ın 0642	-		
Dispatcher logout, name and tir					
DISCREPANCIES:			IMMEDIATE CORRECT	VE ACTION TA	KEN:
				<del></del>	
		· · · · · · · · · · · · · · · · · · ·			
			-		
	<del>.</del>				
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			_		
DELAYS OR LOST TIME E	NCOUNTERED:				
			•		
EQUIPMENT (working, del					
CVE fab crew: Portable toilet (3), f JLG (2), tool trailer. Newman: trac				k. CVE Line Crew:	Pickup (2),
OSHA Recordable Safety I	ncidents:		Reported	d by:	Time:

**Rocky Mountain Power** 

Russ Johnson

Field Construction Representative

## PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild Wednesday, May 16, 2012 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO.: 6:55 Crew Stop Time: Crew Start Time: 19:55 Tot Hrs mns: 20:05 FCR Start Time: 6:43 FCR Stop Time: Tot Hrs mns: 13:22 Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 55 degrees in AM, 85 degrees in PM DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. RMP UG crew pulled circuits 1402 and 1501 last night, they are not terminated. CVE Fab Crew arrived around 10:30 and completed stripping the forms from the N fdns. CVE Electrical Crew arrived around 9:30 to take care of their punch-list items. CVE Line Crew installed grounding along the east fence line, installed jumpers from OH bus to the potheads, arrestors and CCVTs on the Gadsby Line. Newman placed yard rock around Xfmr #1 and the switchgear, placed a lift in the cap bank excavations which were tested and passed by Wilding. Southwire/Wasatch is pulling in A and C phases on the Jordan line from the vault to the substation. They completed the pulling of the third conductor at about 16:30 hours. CVE Line Crew = 5, CVE Fab Crew = 2, CVE Electrical Crew = 2, Newman = 3, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Manny LuHaun 0643 Dispatcher logout, name and time: DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED: EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

**Rocky Mountain Power** 

Russ Johnson

Field Construction Representative

### PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub - Rebuild		DATE: Thursday, May 17, 2012			2012	
PO & Work Order NO. :	3000078050 / 10035803		MAIN CONT	RACTOR:	Cache Valle	alley Electric	
Crew Start Time:	5:55	Crew Stop Time:	16:10		Tot Hrs mns:	10:15	
FCR Start Time:	5:49	FCR Stop Time:	16:30	)	Tot Hrs mns:	10:41	
Use military time format 00:00		-			•		
WEATHER CONDITIONS		O 55 d	:- ABC OF a				
WEATHER CONDITIONS:		Sunny - 55 degre	es in Aivi, 85 d	legrees in P	'IVI		
DESCRIPTION: (work performe R&R set up four monitors. Line crew							
grounding in the north yard on the north structure in the sub, hooking up the S a ground to the south side/center of the along the east side of the control built Xfmr #2. CVE Fab Crew came to the Line Crew = 5, CVE Fab Crew = 2,	S xfinr, cutting a place the switchgear, re-crimp ding to make the fence site long enough to gro CVE Electrical Crew	in the bird guard to gro bing the C-clamps in the more secure. CVE ele but the stems for the N	ound the center percenter percented to the control building ectrical crew is ruffers. Newman I	hase on the . Custom Fe inning conduit backfilled the	low side of xfm ence modified th its to the <b>N</b> four	r #1, adding le fence lidations for	
IF WORKING IN ENERGIZED SU							
Dispatcher login, name and time:	Kelly Astill 0549						
Dispatcher logout, name and time:  DISCREPANCIES:	Al Swinski 1629		MMEDIATE C	OPPECTIVI	E ACTION TA	VEN:	
DISCREFANCIES:	<del> </del>		MINICULATE	ORRECTIVI	E ACTION 12	INCIN.	
						l	
						Ĩ	
DELAYS OR LOST TIME ENCO	UNTERED:						
	•					•	
						ļ	
<b>EQUIPMENT</b> (working, delivere	d, idle):						
CVE fab crew: Portable toilet (3), forklift, JLG (2), tool trailer. Newman: trachoe (2				er, crew truck.	CVE Line Crew:	Pickup (2),	
				٠			
OSHA Recordable Safety Incide	ents:			Reported l	by:	Time:	
L	<del> </del>						

**Rocky Mountain Power** 

Russ Johnson

Field Construction Representative

## PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild DATE: Friday, May 18, 2012 PROJECT NAME: PO & Work Order NO.: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Stop Time: \_\_\_\_\_ 6:55 Crew Start Time: Tot Hrs mns: 14:00 FCR Start Time: 6:39 FCR Stop Time: Tot Hrs mns: 7:21 Use military time format 00:00 Sunny/Rain - 45 degrees in AM, 65 degrees in PM **WEATHER CONDITIONS:** DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. CVE is working 4- 10's this week so we don't have any CVE personnel on site today. Newman backfilled in the cap bank excavations and also in the N fdn excavations. Southwire/Wasatch is working on the shrouds at the Gadsby and Jordan terminal poles on 100 South. CVE Line Crew = 0, CVE Fab Crew = 0, CVE Electrical Crew = 0, Newman = 4, Southwire/Wasatch = 3, R&R = 1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Bany Nielson 0639 Dispatcher logout, name and time: Bany Nielson 1330 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: DELAYS OR LOST TIME ENCOUNTERED:

EQUIPMENT (working, delivered, idle):

CVE fab crew: Portable toilet (3), forklift, 1 dumpster, office trailer, conex, exclusion zone conex, (2), tool trailer, crew truck. CVE Line Crew: Pickup (2), JLG (2), tool trailer. Newman: trachoe (2), loader, bobcat, mini-ex, water truck, compactor, backhoe.

OSHA Recordable Safety Incidents: Reported by: Time:

**Rocky Mountain Power** 

Russ Johnson

Field Construction Representative



May 16, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 235771-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer.

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235771-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235771-1

Client:

Client Project Number / P.O.:

R & R Environmental None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

May 15, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 16, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Ni	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)	•	(s/cc)	(s/cc)	(s/mm²)
3W-051412 W	EM	881220	0.0900	939	ND	0.0046	BAS	BAS
3W-051412 N	EM	881221	0.0900	939	ND	0.0046	BAS	BAS
3W-051412 E	EM	881222	NA	639	NA	Rejected	due to Uneven Filter L	oading
3W-051412 S	EM	881223	0.0900	939	ND	0.0046	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

E

Digitally signed by Eleme Element OH CH & Eleme Element C = US. O = Resources Environmental Inc. Date 2012 05 16 11 11 57 -0000\*

DATA QA

Due	Date:_	5-16-12
Due	Time:	235a

## REILAB RESERVOITS ENVIRONMENT. AI, INC. 5601 Logan 81 Oanver, CO 60216 · Ph; 303 964 1086 · Fax 303-477-4275 · Toil Free :863 RESI-ENV

JUD #					· ··
Page _	1	_	of.	J	

INVOICE TO: (IF DIFFERENT) **CONTACT INFORMATION:** 62 2 Environmenter Company: Contact Dave Roskelly Contact: Address: 47 W 9000 5 #2 Fax: Sounder Ut. 84020 Cell/pager Cell/pager 801 541-LO35 rojoot Number and/or P.O. #: Project Description/Location: 3th West Sub-(LAND dave Evenviro com ASBESTOS LABORATORY HOURS: Weeftdays: 7am - 7pm REQUESTED ANALYSIS VALID MATRIX CODES LAB NOTES: RUSH (Sama Day) K PRIORITY (Naxt Day) Air = A Bulk = B (Rush PCM = 2hr, TEM = 6hr.) Dusi = D Paint = P CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 5pnt Soil = S Wipe = W Metal(s) / Dust RUSH 24 hr. 3-5 Day Swab = SW F = Food "Prior nolification is Quan RCRA 8 / Metals & Welding Drinking Water = DW | Waste Water = WW required for INUSN RUSH 5 day 10 day Fume Scan / TCLP O = Other Preps turnarounds.\*\* 24 hr. \_ \$ day \_\_5 Day "ASTM E1792 approved wipo modia only" Organics MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - Spm E.coll O157;H7, Conforms, S.aureus 24 hr. 2 Day Salmonella, Listeria, E.coll, APC, Y & M \_ 3-5 Day Mold RUSH 24 Hr 48 Hr 3 Day 5 Day "Tumpround times establish a laboratory priority, subject to laboratory volume and am not guaranteed. Additional fees apply for afterhours, weskends and hplidays.\*\* Special Instructions: EM Number (Laboratory Date Time Use Only) Collected Collected Cilent sample ID number (Sample ID's must be unique) MICROBIOLOGY hivmm wp 5/14/12 1/3W-651412W 28122 a 939 21 3 3W-05/412 E .55 3W-0514125 9 (Additional samples shall be listed on attached long form.) Number of samples received: NOTE: REI will ar alyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original deta: 5y eigning client/company representative agrees that submission of the tollowing samples for requested analysis as indicated on this Chain of Custody shell constituigate, anelytical services agroement with payment terms of NET 30 days, failure to compty with payment terms may result in e 1.5% monthly interest surcharge. Date/Time: 51141 Relinquished By: Sample Condition: On Ice Sealed Intact Laboratory Use Only Yes / No (Yes / No Temp. (F°) Yes / Na 51-512-a Date/Time: S35 Carrier. Received By: Results: Phone Enfail Fax Contact Phone Email Fax Date Time Initials Contact Date Time Initials Phone email Fax Contact Phone Email Fax Date Time Initials Contact Date Time Initials 7335 G430 3377

7-2011\_version-1

#### **Attachment I**

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type	Structure Types
A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite T = Tremolite	F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

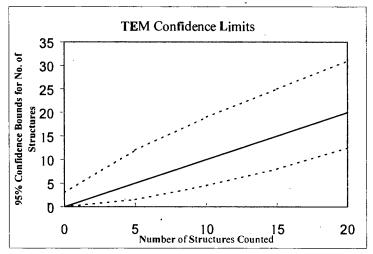
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

#### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX Th S
Vollage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	303
QA Type	

Client :	R+R
Sample Type (A=Air, D=Dus@:	A
Air volume (L) or dust area (cm2)	939
Date received by lab	5/15/12
Lab Job Number:	235771
Lab Sample Number:	881220

Lab Sample Number:	001220
F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspenalon Volume (ml)	·
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	Sholiz
Method (D=Direct, l=Indirect, lA=Indirect, ashed)	1D1.
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
	One operang	Туре	Primary	Total	Length	Width	ido i (iliodilo) i	Amphibole		NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-1	ND		,		Page	1 90%	hut 5	-7%	debnis				
	64-1	ND				Pup	B 70 %	intent 5	7%	e four's	·			·
	F4-1	NO				•								
	E4-1	ND						AB 5	15/12				,	
	C4-1	ND						/' /						
B	F4-3	ND						·						
	E4-3	ND				·								
	C4-3	ND						·						
	BH-3	ND												

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2) Secondary Filter Area	385
(mm2) QA Type	

Client :	R+R
Sample Type (A=Air, D=Dusi):	A
Air volume (L) or dust area (cm2)	939
Date recaived by lab	5/15/12
Lab Job Number:	235771
Lab Sample Number:	881221

F-Factor Calculation (Indirect Preps Only):							
Fraction of primary filter used							
Total Resuspension Volume (ml)							
Volume Applied to secondary filter (ml)							

Analyzed by	JB
Analysis date	5/16/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grkl storage locatkin	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	ctures Dimensions		dentification	Mineral Class		}	1 = yes, blank = no			
J.,	One opening	Туре	Primary	Total	Length	Width	(Identification	Amphibole	_ c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-3	MD												
	63-3	ND												
	F3-3	ND			Pup	A	13 -	-80%	Fur	F	5% de 15	7'5		
	E3-3	ND								4				
	C3-3	ND							1	5	16/2			
3	144	M				 			//	/	/.			
	64-4	NP						·						
	F4-4	M												<u> </u>
	E4-4	M						·						
										·				

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotile

NAM = Non-asbestos material

T:\Worksheet in TEM Banch sheet dos

Page	1	of		
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Laboratory name:	REI
Instrument	JEOL 100 CX (b) S
Voltage (KV)	100 KV
Magnification	(20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area. (mm2)	
QA Type_	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air yolume (L) or dust area (cm2)	639
Date received by lab	5/15/12
Lab Job Number:	235771
Lab Sample Number.	881222

Analyzed by	
Analysis date  Melhod (D=Direct, I=Indirect, IA=Indirect, ashed)	5/16/12
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):				
Fraction of primary filter used				
Total Resuspension Volume (ml)				
Volume Applied to secondary filter (ml)				

Grkl	Grid Opening	Structure	No. of Str	uctures ·	- Dime	nsions	Identification	Mineral Class	·			1 = y	= no	
	One Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	c	NAM	Sketch/Comments	Sketch	Photo	. EDS
				K	eject.	d al	Dren	wation c	be t	נו פ	neven Cil	er la	adi	па
					)			.1						<u>ر</u>
								13	1/16/	2				
									<b>y</b> /					
	·													

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysotile

NAM = Non-asbestos material

Laboratory name:	REI
Instrument	JEOL 100 CX (N)S
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

	1
Client:	R+R
Sampte Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	939
Date received by lab	5/15/12
Lab Job Number:	235771
Lab Sample Number:	881223
, · · · <del> ·</del>	

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mf)	
Volume Applied to secondary filter (ml)	

Analyzed by	73
Analysis dale	5/16/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	8
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grkl	Grid Opening	Structure	No. of Str	uctures	- Dime	nsions	Ideniification	Mineral Class		···		1 = y	es, blank	= no
CIKI	Ond Operang	Туре	Primary	Total	Length	Width	iderimoajion	Amphibole	_с_	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H2-3	ND												
	62-3	ND			2	ل عن	LAB	~60%	o int	ant	5-10%	deb	45	
	63-4	ND								11				
	F34	MD			ļ					15	5/10/12			ļ <u> </u>
	£3-4	ND							//					ļ
B	E2-6	ND												
	C26	ND			<u></u>									
	B2-6	ND												
	A2-6	ND												
		L												

LA = Libby-type amphibole

OA = Other (non-Libby type) amphibole

C = Chrysolile

NAM = Non-asbestos material

T:\Worksheet in TEM Bench eheet doc

#### Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

**B**undle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed,  $mm^2 = \# GO \text{ counted } x \text{ Average GO Area (mm)}$ 

Concentration, s/cc =  $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



May 17, 2012

Laboratory Code:

**RES** 

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 235868-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235868-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely.

Jeanne Spencer

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235868-1

Client:

R & R Environmental None Given

Client Project Number / P.O.: Client Project Description:

3rd West Sub - RMP

Date Samples Received:

May 16, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 17, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Number		Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
	_		(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-051512 W	EM	881401	0.0900	902	1	0.0047	0.0047	11.1
3W-051512 N	EM	881402	0.0900	902	ND	0.0047	BAS	BAS
3W-051512 E	EM	881403	0.0900	902	ND	0.0047	BAS	BAS
3W-051512 S	EM	881404	0.0900	900	ND	0.0048	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE II. SUMMARY OF ANALYTICAL DATA

**RES Job Number:** 

RES 235868-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

Analysis Type:

May 16, 2012

TEM, AHERA

24 Hour

Turnaround:

Date Samples Analyzed:

May 17, 2012

Client ID Number	Lab ID No	umber	Asbestos Mineral	Asi	bestos Str	ucture Typ	pes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for
			_	Fibers	Bundles	Clusters	Matrices	•		Concentration
3W-051512 W	EM	881401	Chrysotile	0	0	0	1	0	0	1
3W-051512 N	EM	881402	ND	0	0	0	0	0	. 0	0
3W-051512 E	EM	881403	ND	0	0	0	.0	0	0	0
3W-051512 S	EM	881404	ND	0	0	0	0	0	0	0

<sup>\*</sup>See Analytical Procedure for definitions

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to i ncorrect aspect ratio

ND = None Detected

Due Date:_	51712
Due Time:	5400

## REILAB RESERVOITS Environmental, Inc. 8001 Logan St. Denver, CO 20216 - Phr. 303 964 - 1946 - Fax 303-477-4276 - Toll Frem :866 RESI-ENV

Job #\_\_\_\_\_ Page \_\_\_1 \_\_of \_\_\_\_

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12011\_version 1

### Attachment I

Key to Count Sheets Count Sheets Anaiyticai Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

#### Asbestos Type

#### Structure Types

A = Amosite		F = Fiber
An = Anthophyllite		B = Bundle
C = Chrysotile		C = Cluster
Cr = Crocidolite		M = Matrix
T = Tremolite	1	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

#### Sizing Conversion

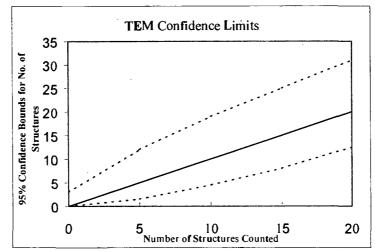
1 length unit = 5 mm on screen = 0.278 micron 1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

#### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N (\$)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RTR
Sample Type (A=Air, [)=Dust):	A
Air volume (L) or dust area (cm2)	902
Oate received by lab	5/16/12
Lab Job Number:	2 33868
Lab Sample Number:	881401

F-Factor Calculation (Indirect Preps	Only):	
Fraction of primery filtar used		
Total Resuspension Volume (ml)		
Volume Applied to secondary filter (ml)		

Analyzed by	-W_
Analysis date	15/16/12
Method (D=Direct, I=Indirect, IA=Indirect, astied)	
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class			,	1 = y	es, blank	= no
Ond	Ond Opening	Туре	Primary	Total	Length	Width	Continuation	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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B	436	M												:
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	03-6	M												
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Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	(20KX) 10KX
Grid openina area (mm2)	0,01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	RTR
Sample Type (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	902
Dale received by lab	5/16/12
Lab Job Number:	23568
Lab Sample Number:	881402
•	•

F-Factor Calculation (Indirect Preos	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	W
Analysis date	5/16/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	Ď
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class	·			1 = y	es, blank	= no
		Туре	Primary	Total	Lenath	Width	Tacrimica non	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
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Laboratory name:	REI
Instrument	JEOL 100 CX N &
Voltage (KV)	100 KV
Voltage (KV)	100 NV
Magnification	(20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	<del></del>
QA Type	

1207 7 120 02102 02 2021 0 0021 12							
Client :	RAR						
Sample Type (A=Air, D=Dust):	A						
Air volume (L) or dust area (cm2)	902						
Date received by lab	5/16/12						
Lab Job Number:	235868						
Lab Sample Number:	881403						
	· · · · · · · · · · · · · · · · · · ·						

AH
5/17/12
D
HH
Month Analyzed
Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary fitter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	nctures	Dlme	nsions	Identification Mineral Class					1 = yes, blank = no				
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	C4-6	ND														
	B4-6	QŃ				8										

Laboratory name:	REI
Instrument	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	(20PX, 10PX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

RAR
A
900
5/16/12
235868
881404

Analyzed by	Alt
Analysis date	5/17/2
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	HH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):						
Fraction of primary filler used						
Total Resuspension Volume (mi)						
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Structure	No. of Str	nctures	Dime	nsions	Identification	Mineral Class			]	1 = ves, blank = no				
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#### Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

**B**undle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

#### **Equations Used for Calculations**

Area Analyzed,  $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$ 

Concentration, s/cc =  $\frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000\text{cc}}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos structures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



May 18, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 235966-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. Is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 235966-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 235966-1

Client:

Client Project Number / P.O.:

R & R Environmental None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

May 17, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 17, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID Ni	ID Number		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)	•	(s/cc)	(s/cc)	(s/mm²)
3W-051612 W	EM	881614	0.0800	979	ND	0.0049	BAS	BAS
3W-051612 N	EM	881615	0.0800	979	ND	0.0049	BAS	BAS
3W-051612 E	EM	881616	0.0800	979	ND	0.0049	BAS	BAS
3W-051612 S	EM	881 <b>6</b> 17	0.0800	977	ND	0.0049	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

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## REILAE RESERVOITS ENVIRONMENTAI, INC. 5601 Logen St. Oanver, CO 80216 • Ptr. 303 984-1986 • Fax 303-477-4275 • Toli Free :886 RESI-ENV

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Fume Sca	n/TCLP		- · <del></del> ·		arounds.**	18	+ soa			8		] ]	1.5								0=	Other		<u> </u>		
Organics		24 hr	_ 3 day5 Day			اقق		1		Metals Scan			Quantification		<u>و اع</u>	:	E S		STM	E1792	2 appro	ved wipe	media only"	<u> </u>		
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E.coli O15	7:H7, Coliforms, S.a		24 hr2 Day		ay	8	202 F 5	OSHA	١.	- Analyta(s) TCLP, Welding Fume,	ļ	11	1	Quantification		2	8 6					1	1			
	a, Listeria, E.coli, AF	PC, Y & M .	48 Hr3-5 D	-		Long	∵ თ		Respirable	S.	. 1		1,			Quantific	8 3			ĺ	1			<u> </u>		
Mold			RUSH24 Hr_	48 Hr:	3 Day5 Day		Level II,	7400B	20.	(§ 3)	. I.	.   🗐	18		8 8	ΙŌ	E 3		1	ì	ł			<u> </u>		
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Sial la		apply to alternoors, w	ouxenus and nemays.	<u></u>		Short report,	AHERA,	7400A.	Total,	₹ 5	8	36	* E	*	<u>نا نظ</u>	1	÷   5	₽	_	Code						
Special in:	structions:					<u>ب</u>	4 §	12		% ° €	S 3	E.cof 0157:H7:	Listeria: +/- Aerobic Plate	8	Coliforms:	Σ •5	설트	<b>9</b>	ğ	ĕΠ		Date <sup>r</sup>	Time		I <b>mber</b> (Lat Use Only)	oratory
						Ę	Semi	20	DUST	METALS RCRA 8,	ORGANICS - METH					<u>   </u>	Mold: +/-, identification, Quantification	Sample Volume	(L) / Age	Matrix	3   c₀	ollected	Collected		OSE Only)	
	ample ID number	(Sam	ple ID's must be uniq	ue)		1=	E 35	Ĭ	٥	<b>E</b> &	<u> </u>	7 7	MICR	OBIO	LOG	Υ Τ.Τ	3			<u> </u>		m/dd/yy	hh/mm e/p	<del> </del>		
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2 3W	-09612N -09612E	<u> </u>						+-	$\vdash$			╁	-	H	+	╁┤		97	•	-	+-	1	-	<del> </del>	1 (5	
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7				<u> </u>	<u></u>						+	+	╁	††	+	11	1 -	+	+	+	+			<del> </del>	<del>`</del>	
8												11			+	T	: :		7	+		: .	1.1.1			
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10							1. 1				4			П					1.	1						
	samples received:	(4)			s shall be listed on									_	_											
analysis	REI will analyze incoming sar ea indicated ort this Chain o	mples based upon thom of Custody shall constitute	an analytical services agree	ement with payme	errors or omissions in c ent terms of NET 30 day	atculat rs, fallu	ine to co	mply w	rom u rith pa	ne inaccu lyment te	nacy of	ongata y resul	ina 1	.5% m	onthi	y Inter	st surch	reprosent	ative a	grees	inat suc	mission of	the following as	imples for A	equested	
Relingui	shed By:	tis /	i	Fed-E	· · · · · · · · · · · · · · · · · · ·			Date	e/Tin	ne: C	116	liz							Samo	olo Co	onditis	in: C	On Ice	Sealed	Intact	
	ory Use Only	1		Date/Time;	<i></i>	12	-		٠.	Carrier	4		26	=	~			$\neg \neg$	Temp			_		es / No	(es/N	• `
Results:	Contact	Ptione Email			me Inili	als_	C	ontact			<u> </u>	hone	Ent	Sil Fa	ax			Dale	3	76	is	- Tim	10 94 C	Init	ars	
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				Lh -	- 6 =	7.5	<del>2</del> 3	S	6	+3	)	V	100	2											0	

7-2011\_version 1

#### Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

# Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite Cr = Tremolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

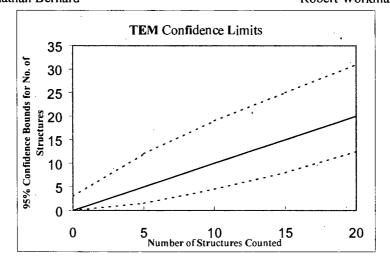
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

#### **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification	20KX iOKX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	5

Client :	RtR
Sample Type (A=A(r, D=Dust):	A
Air volume (L) or dust area (cm2)	979
Date received by lab	5/17/12
Lab Job Number:	235.966
Lab Sample Number:	881614

F-Factor Calculation (Indirect Preps Only):				
Fraction of primary filtsr used				
Total Resuspension Volume (mi)				
Volume Applied to secondary filter (ml)				

Analyzed by	-W2
Analysis date	5/17/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	0
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	nctures	Dime	nsions	Identification	Identification Mineral Class				1 = y	es, blank	= no
Ond	Grid Opening	Туре	Primary	Total	Length	Width	Ideniinodion	Amphibole	С_	NAM	Sketch/Comments	Sketch	Photo	EDS
A	454	M			·									
	654	M			Ine	r A	60%	now 5%	Pode	613				
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	e5-4	M			(						00		7	
13	40-4	M		,										
	96-4	W		`										<u> </u>
	Fb-4	W								·		!   		 
	EC-4	M												
								`,		·				

Laboratory name:	REI
Instmment	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	,

Client:	RtR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	979
Date received by lab	5/17/12
Lab Job Number:	235.966
Lab Sample Number:	881615

Analyzed by	Wh
Analysis date	5/17/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	0
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):				
Fractian of primary filter used				
Total Resuspension Volumo (ml)				
Volume Applied to secondary filler (m()				

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification Mineral Class					1 = y	l = yes, blank = no	
Ond	Ond Opening	Туре	. Primary	Total	Length	Width	Identification	Amohibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H43	M					·							
	94-3	m			, 	Pres	A 600	Jutus	52	les	n's			
	M-3	ND				for	Big	1 Tole	1-/1=	1/12				
	E4-3	W							7					
<u>.</u> G.	64-3	M										-		
	PU-3	M							1.				·	
	EM-3	3(												
	cu-3	<b>M</b>							, ,	,				
				·			·			,				

Laboratory name:	REI
Instmment	JEOL 100 CX N 8
Voltage (KV)	100 KV
Magnification	ZOKEN IOKX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	979
Date received by lab	5/17/12
Lab Job Number:	235,966
Lab Sample Number:	881616

Analyzed by	-Me
Analysis date	5/17/12
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):					
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Stmcture Type	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
			Primary	Total	Length	Width		Amphibole		NAM	Sketch/Comments	Sketch	Photo	EDS
A	45-3	M												
	125-3	M			Pu	er A	20%	nece	~5~	10%	debro			
	F5-3	M			P	Co B	50% iv	mus c	5-101	de	ors fell	-5/1	7/10	<u> </u>
	25-3	M									. 00	·	ı	
	05:3	M								·				
<b>B</b>	64-1	Nŋ		L				``						
	EU-1	M												
	646	M												<u> </u>

Laboratory name:	REI
Instmment	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	EOKX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary lilter area (mm2)	385
Secondary Filter Area (mm2)	-
QA Type	

R+R
A
977
5/17/12
2 35 966
881617

Analyzed by	M
Analysis date	5/17/12
Method (D=Oirect, I⇒Indirect, IA=Indirect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preos	<u>o</u>	nly)	:	 	
Fraction of primary filter used					
Total Resuspension Volume (ml)	1		•		
Volume Applied to secondary filter (ml)					

Grid	Grid Opening	Stmcture	No. of Str	nctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width	i de i di de de de de de de de de de de de de de	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-3	M					·					`		
	GV-3	M		-	P	ci A	80%	which is	7.	les,				
	PM-3	M		,	Pr	er!	B MA	Soll	5/1	7/1	-			
	84-3	M												
3	153	M							,					
	15.3	M												
	145-3	M				,								
	05.3	M					, .							
								,						
						_								

## Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

**B**undle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

## **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration,  $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading,  $s/mm^2 = \frac{\# \text{ Asbestos structures}}{\text{Area Analyzed (nm}^2)}$ 

GO = TEM grid opening



May 22, 2012

Laboratory Code:

**RES** 

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 236132-1 None given

Project Description:

3rd West Sub-RMP

R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 236132-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

## RESERVOIRS ENVIRONMENTAL, INC.

NVI AP Lab Code 101896-0; TDN: #30-0015

## TABLE |. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

**RES Job Number:** 

RES 236132-1

Client:

R & R Environmental

Client Project Number / P.O.:

None given

Client Project Description:

3rd West Sub-RMP

Date Samples Received:

May 19, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 21, 2012

Client ID Number	Lab ID Nu	ımbar	Area Analyzed	Air Volume	Number of Asbestos	Analytical Sensitivity	Asbestos Concentration	Filter Loading
ib Number		iiiibei	Allalyzeu	Sampled	Structures Detected	Sensitivity	concentration.	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-051712W	EM	881981	0.0900	889	1	0.0048	0.0048	11.1
3W-051712N	EM	88198 <b>2</b>	0.0900	891	ND	0.0048	BAS	BAS
3W-051712E	EM	88198 <b>3</b>	0.0900	887	ND	0.0048	BAS	BAS
3W-051712S	EM	881984	0.0900	885	ND	0.0048	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm<sup>2</sup> = 0.010

Filter Material = Mixed C ellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

Deput desail

DATA QA

## RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

#### TABLE II. SUMMARY OF ANALYTICAL DATA

**RES Job Number:** 

RES 236132-1

Client:

R & R Environmental

Client Project Number / P.O.:

None given

Client Project Description:

3rd West Sub-RMP

Date Samples Received:

May 19, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 21, 2012

Client ID Number	Lab ID No	umber	Asbestos Mineral	Asl	bestos Str	ucture Ty	pes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for
				Fibers	Bundles	Clusters	Matrices			Concentration
3W-051712W	EM	881981	Chrysotile	0	1	0	0	1	0	1
3W-051712N	EM	88198 <b>2</b>	ND	0	0	0	0	0	0	0
3W-051712E	EM	88198 <b>3</b>	ND	0	0	0	0	0	0	0
3W-051712S	EM	881984	ND	0	0	0	0	0	0	. 0

<sup>\*</sup>See Analytical Procedure for definitions

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to i ncorrect aspect ratio

ND = None Detected

Due Date:_	5/22
Due Time:_	- /la

Oblitact

Contact

Phone Email Fax

Phone Email Fax

Date

Date

Time

Time



Page

5801 Logan St. Denver, CO 80216 • Phr 303 964-1986 • Fax 303-477-4276 • Toll Free :668 RESI-ENV Pagsr : 303-509-2098 INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION: Company Contact: RIR Environmenta hve Roskeller Address: hona: 47 W 98205 #Z Fax: Sunda Ul. RUD70 Call/pager Project Number and/or P.O. # Project Description/Location: West Sub-RMP **VALIO MATRIX CODES** LAB NOTES: ASBESTOS LABORATORY HOURS: Weekdays: 7am - 7pm **REQUESTED ANALYSIS** RUSH (Same Day) X PRIORITY (Next Day) STANDARD Bulk = B Air = A (Rush PCM = 2hr. TEM = 6hr.) Paint = P Dust = D CHEMISTRY LABORATORY HOURS: Weekdays: Sam - Spm Soil = S Wipe = W RUSH 24 hr. 3-5 Day Metal(s) / Dust Swab = SW F = Food \*\*Prior notification is RCRA 8 / Metals & Welding Drinking Watar = DW | Waste Water = WW Long report, Point Count RUSH \_\_\_ 5 day \_\_\_ 10 day required for RUSH Fume Scan / TCLP O = Olhor tumarounds.\*\* \$ \*\*ASTM E1792 approved wipe media only\*\* Organics 24 hr. \_\_\_ 3 day \_\_\_ 5 Day õ MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm E.coli O157:H7, Colifbrms, S.aureus 2 Day SHA 3-5 Day Salmonella, Listeria, E.coll, APC, Y & M 48 Hr. RUSH 24 Hr 48 Hr 3 Day Short report, \*\*Turnaround times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional fees apply for aftertiburs, weskanda and holidays.\*\* Matrix Code Special Instructions: EM Number (Laboratory Date Time Use Ordy) Collected Collected Client sample ID numbor (Sample ID's must be unique) MICROBIOLOGY hivmm a/p A 3W-05(717 W 3W-05(7/2 F 3W-051712 8 9 10 Number of samples received: (Additional samples shall be listed on attached long form.) NOTE: REI will analyze incoming samples based upon information received and will not be responsible for errors or omissions in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of this following samples for errors analysis as indicated on this Chain of Custody shall constitute an analysisal services agreentent with payment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge. Relinguished By: Sample Condition: On Ice Sealed Laboratory Use Only Yes / No Yes / No T3Dale/Time: 5/19/12 Received By: Carrler: Results:

Date

-Time

Initiale-

Phone Email Pax

Phone Email Fax

Conlact

Conlact

Initials

Initials

## Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

# Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

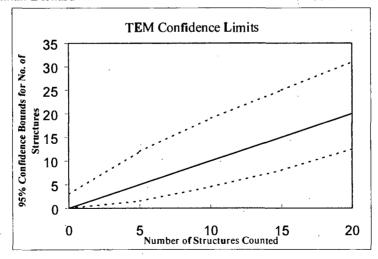
1 width unit = 1 mm on screen = 0.0556 micron

## **TEM Analysts**

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard

= Tremolite

Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrumeni	JEOL 100 CX N &
Voltage (KV)	100 KV
Magnification	(20)KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tvoe	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	889
Dale received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881981

Analyzed by	Ан
Analysis date	5/21/12
Method (D=Dlrect, I=Indirect, IA=Indirect, ashed)	4
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):			
Fraction of primary filter used			
Total Resuspension Volume (ml)			
Volums Applied to secondary filter (ml)			

Grid	Grid Opening	Stmcture	No. of Str	uctures	Dime	nsions	Identification	Mineral Class		·····		1 = ye	es, blank	= no
Ond	Grid Opening	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	1453	MD												
	H53	$\mathfrak B$		1	18	5	CD		/			<b>-</b>		
	65-3	$\Delta$												
	F5-3	$\Delta \mathcal{N}$		P	0-A>	80%	intac	- 5-10	0%0	lebr				
	E5-3	ΜŪ		Pie	BA	- Pika	A							
3	144-1	4												
	14-1	ND						X						
	64-1	AN												
	F4-1	M						,						

Laboratory name:	REI
Instrument	JEOL 100 CX N &
Voltage (KV)	100 KV
Magnification	(20)KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filler Area (mm2)	
QA Type	

Client:	Rap
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	891
Date received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881982

Analyzed by	AH.
Analysis date	5/21/12
Method (D=Direct, I=Indirect, IA=IndIrect, ashed)	
Counting mles (ISO, AHERA, ASTM)	Ahera
Grid slorage location	Month Analyzed
Scope Alignntent	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	nctures	Dime	nsions	Identification	Mineral Class	Mineral Class			1 = yes, blank = n		= no
Gild	Grid Opening	Type	Primary	Total	Length	Width	Identinoation	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	14-6	MD					-							.
,	H4-6	MD							J					· 
	64-6	M		Piec	A:90	of in	tact	10-15% d	lebs					
	F4-6	M		Peo	B:8	0/20	tact	10-15%	le	65				
	E4.6	NA				·								
B	F5-4	$\triangle$												
	E5.4	77												
	C54	M				A								
	BSH	OV					·							
		-												,

Laboratory name:	REI
Instrument	JEOL 100 CX N &
Voltage (KV)	100 KV
Magnification	(20)KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client:	Rap
Samole Type (A=Air, D=Dusl):	A
Air volume (L) or dust area (cm2)	887
Dale received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881983

Analyzed by	AH
Analysis date	5/21/12
Method (D=Direct, I=Indirect, IA=indlrect, ashed)	4
Counting mles (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Faclor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Stracture	No. of Str	nctures	. Dimei	Dimensions Identifi		Identification Mineral Class				1 = yes, blank = no		
Ond	Ond Opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E6-L	$\sim$		,										
	C6-6	M		į	·			· · · · · · · · · · · · · · ·						
	B6-6	M		Pie	A: L	209.	intac	+ 10%	del	2				
	E5.3	$\Delta$		Page	3~	e A								
	(5,3	100		4,-										
B	644	2		-								_		
	F44	M												
	E4-4	3				X								
	C4-4	M		,										
								-			·			

Laboratory name:	REI
Instmment	JEOL 100 CX N (ST)
Voltage (KV)	100 KV
Magnification	(20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary fitter area (mm2)	385
Secondary Filler Area (mm2)	
QA Type	

	1-10 000111
Client:	RAR
Samole Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	885
Date received by lab	5/19/12
Lab Job Number:	236132
Lab Sample Number:	881984

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Voluma (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	Ан
Analysis dale	5/21/12
Method (D=Direct, l=indirect, iA=Indirect, ashed)	4
Counting mles (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Aiignment	Date Analyzed

Grid	Grid Opening Stmcture No. of Stmctures Dimens		nsions	Identification	Mineral Class				1 = yes, blank = no					
Grid	Ond Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	C NAM		Sketch/Commenis	Sketch	Photo	EDS
A	K4-3	DN		·										
	H4-3	ND				L <del></del>					. 8			
	64-3	$N\Delta$		Pie	A:8	0950	ntact	10%	deb	QP				
	F43	DN		Prep	B~	Q. Cer	A			,				
·	E43	MD												
$\mathcal{B}$	F3-4	M												•
	E3-4	3			·	$Q_{-}$								
	C34	2			y									
	B3-4	NS												

## Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

**B**undle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50<sup>th</sup> structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

## **Equations Used for Calculations**

Area Analyzed, mm<sup>2</sup> = # GO counted x Average GO Area (mm)

Concentration, s/cc =  $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$ 

Filter loading, s/mm<sup>2</sup> = # Asbestos stmctures Area Analyzed (mm<sup>2</sup>)

GO = TEM grid opening



May 22, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 236169-1 None Given

Project Description:

3rd West Sub - RMP

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer.

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 236169-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely.

Jeanne Spencer

President

#### RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

## TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

**RES Job Number:** 

RES 236169-1

Client:

Client Project Number / P.O.:

R & R Environmental None Given

Client Project Description:

3rd West Sub - RMP

Date Samples Received:

May 21, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

May 22, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter	
ID Number	ID Ni	ID Number		Analyzed Volume Sampled		Sensitivity	Concentration	Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-051812 W	EM	882053	0.1000	495	ND	0.0078	BAS	BAS	
3W-051812 N	EM	882054	0.1000	497	ND	0.0077	BAS	BAS	
3W-051812 E	EM	882055	0.1000	495	ND	0.0078	BAS	BAS	
3W-0S1812 S	EM	882056	0.1000	493	ND	0.0078	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm<sup>2</sup> = 0.010

DATA QA

1-866-RE SI-ENV

Reservoirs Environmental, Inc. Reservoirs Environmental QA Manual

## RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

## TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 236169-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

3rd West Sub - RMP

May 21, 2012

Analysis Type:

Turnaround:

TEM, AHERA

24 Hour

Date Samples Analyzed:

May 22, 2012

Client ID Number			Asbestos Mineral	Asl	pestos Str	ucture Typ	pes*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for	
			_	Fibers	Bundles	Clusters	Matrices			Concentration	
3W-051812 W	EM	882053	ND	0	0	0	0	0	0	0	
3W-051812 N	EM	882054	ND	0	0	0	0	0	0	0	
3W-051812 E	EM	882055	ND	0	0	0	0	0	0	0	
3W-051812 S	EM	882056	ND	0	0	0	0	0	0	0	

<sup>\*</sup>See Analytical Procedure for definitions

P: 303-964-1966 F: 303-477-4275

1-666-RE SI-ENV

<sup>\*\*</sup>C = Excluded from total due to lack of confirmation

<sup>\*\*</sup>L = Excluded from total for length less than 0.5 micron (AHERA only)

<sup>\*\*</sup>A = Excluded from total due to i noorrect aspect ratio

ND = None Detected

Due Date: 5 Z.Z \Z.

Due Time: \ \OZO = \_\_\_

## REILAS RESERVOIRS ENVIRONMENTAL, INC. 6801 Logar St. Denver, CO 50216 · Ph. 303 964-1080 · Fax 303-477-4276 · Toll Free :868 RESI-ENV

**RES 236169** 

7841 8147

7-935

5801 Logan St. Denver, CO 50216 • Ph; 303 964-1080 • Fax 303-477-4275 • Toll Free :868 RESI-ENV INVOICE TO: (IF DIFFERENT) CONTACT INFORMATION: company. Re R Environmenta Company 1) oul Rostelle Address 47 W 90003 #2 W. 84W70 Cell/pags Project Number and/or P.O. #: daire @ Merrino. com Project Description/Location: 3 pt 100 t SILB- (CNIP ASBESTOS ABORATORY HOURS: Weekdays: Tam - 7pm REQUESTED ANALYSIS VALID MATRIX CODES LAB NOTES: RUSH (Same Day) PRIORITY (Next Day) STANDARD Air = A Bulk = B (Rush PCM = 2hr, TEM = 6hr.) Dust = D Paint = P CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm Soil = S Wipe = W Metal(s) / Dust \_\_\_ RUSH \_\_\_ 24 hr. \_\_\_ 3-5 Day Swab = SW F = Food \*\*Prior notification is 3 Drinking Water = DW | Waste Water = WW RCRA 8 / Metals & Wetding Point Count required for RUSH RUSH 5 day \_\_\_10 day Fume Scan / TCLP O = Other turnarounds.\*\* 24 hr. 3 day 5 Day "ASTM E1792 approved wipe media only" Organics MICROBIOLOGY LABORATORY HOURS: Weekdays: 9ami - 6pm 3:5 Day E.coll O1S7:H7, Coliforms, S.aureus 24 hr. 2 Day OSHA 48 Hr. \_\_\_3-5 Day Salmonetla, Listeria, E.coti, APC, Y & M AHERA, Level II, rant, Micro-vac, F 7400B, Mold RUSH 24 Hr 48 Hr 3 Day "Turnarbung timps establish a taboratory priority, subject to taboratory yplume and ata not guaranteed. Additional rees apply for aftertmurs, weakends and holidaya." Special Instructions: (L) / Area EM Number (1 aborator) Date Use Only) Collected Collected Client sample ID number (Sample ID's must be unique) MICROBIOLOGY mm/dd/yy hh/mm a/p 5/10/12 882053 497 54 495 3W ~09812 493 50 7 8 9 Number of samples received: (Additional samples shall be listed on attached long form.) NOTE: REI will analyze incoming samples based tipern information recoived and will not be responsible for errors or ombisions in calculations rewriting from the inaccuracy of original date. By signing client/company rapresentative agrees that submission of the following samples for requested analysis as indicated on this Chain of Custody shall constitute an analytical services agreement with payment terms of NET 30 days, failure to comply with payment terms may recult in a 1.5% monthly interest surcharge. 5118112 Relinquished By: Date/Time: Sample Condition: On loe Sealed Intacl Laboratory Use Only 1020-Yes No Temp. (F°) Yes / No Yes / No 5.21.12 Feeler Received By: Date/Time: Canier: Results: Phone Email Fax Initials Contact Phone Email Fax Date Time Initials Contact Date Time Phone email Fax Time Initials Contact Phone Email Fax Date Time Initials Contact-